

REMARKS

The Office Action mailed February 26, 2007, has been received and reviewed. Claims 1 through 9 are currently pending in the application. Claims 1 through 9 stand rejected. Applicants have amended claims 1, 4 and 5, and respectfully request reconsideration of the application as amended herein.

35 U.S.C. § 102(b) Anticipation Rejections

Anticipation Rejection Based on U.S. Patent No. 4,547,836 to Anthony

Claims 1 through 5, 7 and 9 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Anthony (U.S. Patent No. 4,547,836). Applicants respectfully traverse this rejection, as hereinafter set forth.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

The 35 U.S.C. § 102(b) anticipation rejections of claims 1 through 5, 7 and 9 are improper because the Anthony reference does not describe, either expressly or inherently, the identical inventions in as complete detail as are contained in the claims. Since the Anthony reference does not describe, either expressly or inherently, the identical inventions in as complete detail as are contained in the claims, the Anthony reference cannot anticipate under 35 U.S.C. § 102 the presently claimed invention of amended independent claim 1, and claims 2-5, 7 and 9 depending therefrom.

Applicants' invention as presently claimed in amended independent claim 1, from which claims 2-5, 7 and 9 depend, recites:

1. A method for electrically coupling a first side of a semiconductor substrate to a second side of said semiconductor substrate, comprising:
forming a hole having an inner surface from a first side of a semiconductor substrate to a second side of said semiconductor substrate;
forming an insulting layer on said inner surface in said hole; and
plating over said insulating layer on said inner surface of said semiconductor substrate

to form a plated conductive element by forcing a plating solution from said first side of said semiconductor substrate and exiting said plating solution from said second side of said semiconductor substrate through said hole. (Emphasis added.)

At least Applicants' claimed elements of "***forming an insulting layer on said inner surface in said hole***" and "***plating over said insulating layer on said inner surface of said semiconductor substrate***" are not disclosed in the Anthony reference. Accordingly, Applicants respectfully request the rejections of claims 1-5, 7 and 9 be withdrawn.

The Anthony reference generally discloses a non-conductive substrate with a bore therethrough which requires the formation of an initial conductive layer capable of having a conductive metal layer plated thereto. Specifically, the Anthony reference discloses:

Bores 12 can be formed directly in glass plates 11 (Anthony, col. 2, lines 51-52).

... a ***glass composition*** ... has the desired ***high electrical resistivity*** yet the surface of a body of such glass can be converted to an electrical (not ionic) conductor by heating (Anthony, col. 2, lines 61-65; emphasis added).

The lead atoms, which result, coalesce into a ***very thin metallic film*** over the surface of the glass including the ***inside of bores 12***. (Anthony, col. 3, lines 1-3; emphasis added).

... a layer 18 of metal ... is electroplated onto the ***lead-lined internal surfaces of the through holes 12***. (Anthony, col. 5, lines 23-27; emphasis added).

As an alternative to using lead as the metal of layer 17, an ***initial thin metal layer ... may be introduced into bore 12*** by electroless deposition. (Anthony, col. 6, lines 13-16; emphasis added).

Thereafter, deposition of layer 18 by electroplating is necessary in order to obtain the necessary thickness of metal over the inside surface of the hole. (Anthony, col. 6, lines 19-22).

Clearly, the Anthony reference discloses conductors through a substrate, however, the Anthony reference does not disclose Applicants' claim elements of "***forming an insulting layer on said inner surface in said hole***" and "***plating over said insulating layer on said inner surface of said semiconductor substrate***".

Therefore, since at least Applicants' claimed elements of a "***forming an insulting layer on said inner surface in said hole***" and "***plating over said insulating layer on said inner surface of said semiconductor substrate***" are not disclosed in the Anthony reference, the

Anthony reference cannot anticipate under 35 U.S.C. §102 Applicants' invention as presently claimed in amended independent claim 1, and claims 2-5, 7 and 9 depending therefrom.

Accordingly, such claims are allowable over the cited prior art and Applicants respectfully request that such rejections be withdrawn.

35 U.S.C. § 103(a) Obviousness Rejections

Obviousness Rejection Based on U.S. Patent No. 4,547,836 to Anthony in view of U.S. Patent No. 5,487,218 to Bhatt et al.

Claims 6 and 8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Anthony (U.S. Patent No. 4,547,836) as applied to the claims above, and further in view of Bhatt et al. (U.S. Patent No. 5,487,218). Applicants respectfully traverse this rejection, as hereinafter set forth.

The nonobviousness of independent claim 1 precludes a rejection of claims 6 and 8 which depend therefrom because a dependent claim is obvious only if the independent claim from which it depends is obvious. *See In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988), *see also* MPEP § 2143.03. Therefore, the Applicants request that the Examiner withdraw the rejection to independent claim 1 and claims 6 and 8 which depend therefrom.

CONCLUSION

Claims 1-9 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, he is respectfully invited to contact Applicants' undersigned attorney.

Respectfully submitted,



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